

CLAIMS:

1. An electric compressor, comprising:
a compressor housing;
5 a gas compression mechanism accommodated in the
compressor housing;
an electric motor that drives the compression mechanism;
a motor driving circuit that drives the electric motor;
and
10 a circuit cover attached to an outer surface of the
compressor housing, wherein the compressor housing and the
circuit cover define an accommodating space, wherein the motor
driving circuit is accommodated in the accommodating space,
and wherein the motor driving circuit is attached to the
15 circuit cover.

2. The compressor according to claim 1, wherein a
fastener for attaching the motor driving circuit to the
circuit cover is attached to the cover, wherein the fastener
20 prevents the motor driving circuit from being detached from
the circuit cover, and permits the motor driving circuit to
move toward the circuit cover.

3. The compressor according to claim 2, wherein the
25 fastener includes a bolt and a nut, wherein the bolt is
inserted through the motor driving circuit with a proximal end
of the bolt fixed to the circuit cover, and the nut is
threaded to a distal end of the bolt.

30 4. The compressor according to claim 1, wherein, when the
circuit cover is joined to the compressor housing, the motor
driving circuit is held between the compressor housing and the
circuit cover.

35 5. The compressor according to claim 4, wherein the motor

driving circuit includes a circuit board and a switching element, wherein the circuit board has a first surface facing the circuit cover and a second surface located on a side opposite from the circuit cover, and wherein the switching
5 element is mounted on the second surface, and

wherein, when the circuit cover is joined to the compressor housing, the switching element is pressed against the compressor housing.

10 6. The compressor according to claim 5, wherein an adjusting member is arranged between the circuit cover and the circuit board, and wherein the adjusting member adjusts force with which the switching element is pressed against the compressor housing.

15 7. The compressor according to claim 6, wherein the adjusting member includes a circuit board support member, and wherein the circuit board support member is located on a part of the first surface of the circuit board that corresponds to
20 the switching element.

8. The compressor according to claim 7, wherein the circuit board support member is made of resin.

25 9. The compressor according to claim 6, wherein the adjusting member includes a spacer arranged between the circuit cover and the circuit board.

30 10. The compressor according to claim 9, wherein the spacer is a selected one of a plurality of spacers that have been prepared in advance, wherein the spacers have different thicknesses.

35 11. The compressor according to claim 5, wherein an elastic member is arranged between the compressor housing and

the switching element.

12. A method of assembling an electric compressor having a compression mechanism accommodated in a compressor housing, wherein the compression mechanism is driven by an electric motor to compress gas, the method comprising:

attaching a motor driving circuit for driving the electric motor to a circuit cover; and

joining the circuit cover, to which the motor driving circuit is attached, to an outer surface of the compressor housing such that the compressor housing and the circuit cover define an accommodating space for accommodating the motor driving circuit.

13. The assembling method according to claim 12, wherein the step of attaching the motor driving circuit to the circuit cover includes attaching the motor driving circuit to the circuit cover with a fastener such that the motor driving circuit is prevented from being detached from the circuit cover, and permitted to move toward the circuit cover.

14. The assembling method according to claim 12, wherein, when the circuit cover is joined to the compressor housing, the motor driving circuit is held between the compressor housing and the circuit cover.

15. The assembling method according to claim 14, wherein the motor driving circuit includes a circuit board and a switching element, wherein the circuit board has a first surface facing the circuit cover and a second surface located on a side opposite from the circuit cover, and wherein the switching element is mounted on the second surface, and

wherein, when the circuit cover is joined to the compressor housing, the switching element is pressed against the compressor housing.

16. The assembling method according to claim 15, further comprising arranging an adjusting member between the circuit cover and the circuit board to adjust force with which the
5 switching element is pressed against the compressor housing.

17. The assembling method according to claim 16, wherein the adjusting member is made of resin, the method further comprising:

10 providing the resin for the adjusting member between the circuit cover and the circuit board before the resin is hardened; and

attaching the circuit board to the circuit cover while the resin remains soft such that the thickness of the
15 adjusting member between the circuit cover and the circuit board is adjusted.

18. The assembling method according to claim 16, wherein the step of arranging the adjusting member includes arranging
20 a spacer between the circuit cover and the circuit board, wherein the spacer is selected from a plurality of spacers having different thicknesses.